

1 2 3. (Amended) A process according to Claim 1 [2] wherein the ether comprises
2 at least one cyclic ether.

1 3 4. (Amended) A process according to Claim 1 [2] wherein the ether is
2 tetrahydrofuran.

a 3 1 9 10. (Amended) A process according to Claim 1 [wherein the mixture further
2 includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone,
3 wherein (b) is an alkali metal borohydride and wherein (c) is water or an alcohol.

✓ 1 12 12. (Amended) A process which comprises [(i)]
2 mixing together at least one of each of the following: (a) a 4,5-benzoindanone, (b) an
3 alkali or alkaline earth metal borohydride or alkali or alkaline earth metal aluminum
4 hydride, [and] (c) a hydroxyl-containing compound capable of interacting with (b) to
5 serve as a hydrogen source, and (d) at least one ether;
6 2) maintaining the resultant mixture under reaction conditions causing a 4,5-benzoindanol
7 to be formed; [and (ii)]
8 3) terminating the reaction by quenching the reaction mixture with water or an aqueous
9 mixture;
10 4) extracting the quenched reaction mixture with a liquid hydrocarbon having a higher
11 boiling point or a higher initial boiling point than the ether;
12 5) distilling at least the ether from the resultant extract; and
13 6) catalytically dehydrating said 4,5-benzoindanol using an [a] arylsulfonic acid catalyst
14 to thereby form a 4,5-benzoindene.

1 12 13. (Amended) A process according to Claim 12 [wherein the mixture formed in
2 (i) further includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone,
3 wherein (b) is an alkali metal borohydride and wherein (c) is water or an alcohol.

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Cancel Claims 15 and 16 without prejudice or disclaimer.

1 *17.* (Amended) A process according to Claim *12* [wherein the mixture formed in
 2 (i) further includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone,
 3 wherein (b) is an alkali metal borohydride, wherein (c) is water or an alcohol,
 4 [wherein the reaction in (i) is terminated by quenching the reaction mixture with water or an
 5 aqueous mixture,] wherein the [a separation between the water and organic constituents of the
 6 reaction mixture is effected by extracting the quenched reaction mixture with a] liquid
 7 hydrocarbon has [having] a higher boiling point or a higher initial boiling point not only than
 8 the ether, but, [and,] if present, the alcohol as well, wherein not only said ether but, [and,] if
 9 present, said alcohol are distilled off to leave a liquid hydrocarbon solution of the 4,5-benzoindanone
 10 [formed in (i)], and wherein the catalytic dehydration [of (ii)] is conducted without
 11 isolating the 4,5-benzoindanol from the liquid hydrocarbon solution.

1 *21.* (Amended) A process which comprises:

- 1) mixing together at least one of each of the following: (a) a 4,5-benzoindanone, (b) an alkali or alkaline earth metal borohydride or alkali or alkaline earth metal aluminum hydride, [and] (c) a hydroxyl-containing compound capable of interacting with (b) to serve as a hydrogen source, and (d) at least one ether;
- 2) maintaining the resultant mixture under reaction conditions causing a 4,5-benzoindanol to be formed; [2]
- 3) terminating the reaction by quenching the reaction mixture with water or an aqueous mixture;
- 4) extracting the quenched reaction mixture with a liquid hydrocarbon having a higher boiling point or a higher initial boiling point than the ether;
- 5) distilling at least the ether from the resultant extract;
- 6) catalytically dehydrating said 4,5-benzoindanol using an [a] arylsulfonic acid catalyst to thereby form a 4,5-benzoindene; and [3]
- 7) deprotonating said 4,5-benzoindene with a strong base and reacting the resultant deprotonated intermediate with a reactant which in its original condition can be depicted by the formula $R^{11}R^{12}M^1X_2$ where R^{11} and R^{12} are the same or different and each is (i) a hydrocarbyl group containing up to about 18 carbon atoms or (ii) a hydrocarbyl(oxyalkylene) or hydrocarbylpoly(oxyalkylene) group containing up to about

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100 carbon atoms; M¹ is a silicon, germanium or tin atom; and X is a halogen atom; such that a silicon-, germanium- or tin-bridged complex of the 4,5-benzoindene is formed.

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2025. (Amended) A process according to Claim 19 [wherein the mixture formed in 1) further includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone, wherein (b) is an alkali metal borohydride and wherein (c) is water or an alcohol.

✓ Cancel Claims 25 and 26 without prejudice or disclaimer.

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2227. (Amended) A process according to Claim 19 [wherein the mixture formed in 1) further includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone, wherein (b) is an alkali metal borohydride, wherein (c) is water or an alcohol, [wherein the reaction in 1) is terminated by quenching the reaction mixture with water or an aqueous mixture,] wherein [a separation between the water and organic constituents of the reaction mixture is effected by extracting the quenched reaction mixture with a] the liquid hydrocarbon has [having] a higher boiling point or a higher initial boiling point not only than the ether, but, [and,] if present, the alcohol as well, wherein not only said ether but, [and,] if present, said alcohol are distilled off to leave a liquid hydrocarbon solution of the 4,5-benzoindanol [formed in 1)], and wherein the catalytic dehydration [of 2)] is conducted without isolating the 4,5-benzoindanol from the liquid hydrocarbon solution.

Part B
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31. (Amended) A process which comprises:
1) mixing together at least one of each of the following: (a) a 4,5-benzoindanone, (b) an alkali or alkaline earth metal borohydride or alkali or alkaline earth metal aluminum hydride, [and] (c) a hydroxyl-containing compound capable of interacting with (b) to serve as a hydrogen source, and (d) at least one ether;
2) maintaining the resultant mixture under reaction conditions causing a 4,5-benzoindanol to be formed; [2)]
3) terminating the reaction by quenching the reaction mixture with water or an aqueous mixture;

10 4) extracting the quenched reaction mixture with a liquid hydrocarbon having a higher
11 boiling point or a higher initial boiling point than the ether;

12 5) distilling at least the ether from the resultant extract;

13 6) catalytically dehydrating said 4,5-benzoindanol using an [a] arylsulfonic acid catalyst
14 to thereby form a 4,5-benzoindene; [3]

15 7) deprotonating said 4,5-benzoindene with a strong base and reacting the resultant
16 deprotonated intermediate with a reactant which in its original condition can be depicted
17 by the formula $R^{11}R^{12}M^1X_2$ where R^{11} and R^{12} are the same or different and each is (i)
18 a hydrocarbyl group containing up to about 18 carbon atoms or (ii) a
19 hydrocarbyl(oxyalkylene) or hydrocarbylpoly(oxyalkylene) group containing up to about
20 100 carbon atoms; M^1 is a silicon, germanium or tin atom; and X is a halogen atom;
21 such that a silicon-, germanium- or tin-bridged complex of the 4,5-benzoindene is
22 formed; and [4]

23 8) deprotonating said bridged complex with a strong base and reacting the resultant
24 deprotonated intermediate with a Group IV, V, or VI metal tetrahalide to thereby form
25 a silicon-, germanium- or tin-bridged Group IV, V, or VI metal-containing metallocene
26 complex.

10 1 *28* 33. (Amended) A process according to Claim *32* [wherein the mixture formed in
2 1) further includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone,
3 wherein (b) is an alkali metal borohydride, wherein (c) is water or an alcohol, and
4 wherein the zirconium tetrahalide is zirconium tetrachloride or zirconium tetrabromide.

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Cancel Claim 35 without prejudice or disclaimer.

1 *30* 36. (Amended) A process according to Claim *32* [35] wherein the liquid
2 hydrocarbon is [separation of 4,5-benzoindanol from the ether and water is effected by
3 extracting the quenched reaction mixture with] a liquid aromatic hydrocarbon, [having a higher
4 boiling point or a higher initial boiling point than the ether, and distilling at least the ether
5 from the resultant extract.]

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Concluded*

31 ³⁷ (Amended) A process according to Claim ³² [wherein the mixture formed in 1) further includes at least one ether,] wherein the 4,5-benzoindanone is a 2-alkyl-4,5-benzoindanone, wherein (b) is an alkali metal borohydride, wherein (c) is water or an alcohol, [wherein the reaction in 1) is terminated by quenching the reaction mixture with water or an aqueous mixture, wherein a separation between the water and organic constituents of the reaction mixture is effected by extracting the quenched reaction mixture with a] wherein the liquid hydrocarbon has [having] a higher boiling point or a higher initial boiling point not only than the ether, but also, [and,] if present, the alcohol, wherein said ether and, if present, said alcohol are distilled off, [to leave a liquid hydrocarbon solution of the 4,5-benzoindanol formed in 1,) and wherein the catalytic dehydration [of 2)] is conducted without isolating the 4,5-benzoindanol from the liquid hydrocarbon solution.

34 ³⁹ (Amended) A process according to Claim ³¹ wherein each of the respective strong bases [base] used in 7) [3)] and in 8) [4)] is a lithium alkyl.

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35 ³¹ (Amended) A process [which comprises] according to Claim ³¹ wherein the deprotonating of the [a] 4,5-benzoindene with a strong base and the reacting of the resultant deprotonated intermediate are conducted while the 4,5-benzoindene and the resultant deprotonated intermediate, respectively, are dissolved in a liquid lower dialkyl ether, [with a reactant which in its original condition can be depicted by the formula $R^{11}R^{12}M^1X_2$ where R^{11} and R^{12} are the same or different and each is (i) a hydrocarbyl group containing up to about 18 carbon atoms or (ii) a hydrocarbyl(oxyalkylene) or hydrocarbylpoly(oxyalkylene) group containing up to about 100 carbon atoms; M^1 is a silicon, germanium or tin atom; and X is a halogen atom; such that a slurry of a silicon-, germanium- or tin-bridged complex of the 4,5-benzoindene is formed, and separating the solids from the liquid phase by filtration, centrifugation or decantation.]

36 ³² (Amended) A process according to Claim ³¹ wherein the 4,5-benzoindene is a 2-alkyl-4,5-benzoindene, wherein each of the respective strong bases [base] used in 7) and in 8) is a lithium alkyl, and wherein said reactant is a dialkyldihalosilane.

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37 33. (Amended) A process according to Claim *32* [41 wherein the 4,5-benzoindene is a 2-alkyl-4,5-benzoindene, and] wherein [said reactant is a dialkyldihalosilane in which] the alkyl groups of the dialkyldihalosilane contain no more than 4 carbon atoms each.

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Cancel Claim 44 without prejudice or disclaimer.

38 45. (Amended) A process according to Claim *41* wherein the 4,5-benzoindene is 2-methyl-4,5-benzoindene, wherein each of the respective strong bases [base] used in 7) and in 8) is butyllithium, wherein said ether is diethyl ether, wherein said reactant is dichlorodimethylsilane, and wherein said solids are separated from the liquid phase by filtration.

46. (Amended) A process [according to Claim 31 which further comprises] which comprises:

- 1) mixing together at least one of each of the following: (a) a 4,5-benzoindanone, (b) an alkali or alkaline earth metal borohydride or alkali or alkaline earth metal aluminum hydride, and (c) a hydroxyl-containing compound capable of interacting with (b) to serve as a hydrogen source, under reaction conditions causing a 4,5-benzoindanol to be formed;
- 2) catalytically dehydrating said 4,5-benzoindanol using a arylsulfonic acid catalyst to thereby form a 4,5-benzoindene;
- 3) deprotonating said 4,5-benzoindene with a strong base and reacting the resultant deprotonated intermediate with a reactant which in its original condition can be depicted by the formula $R^{11}R^{12}M^1X$, where R^{11} and R^{12} are the same or different and each is (i) a hydrocarbyl group containing up to about 18 carbon atoms or (ii) a hydrocarbyl(oxyalkylene) or hydrocarbylpoly(oxyalkylene) group containing up to about 100 carbon atoms; M^1 is a silicon, germanium or tin atom; and X is a halogen atom; such that a silicon-, germanium- or tin-bridged complex of the 4,5-benzoindene is formed;
- 4) deprotonating said bridged complex with a strong base and reacting the resultant deprotonated intermediate with a Group IV, V, or VI metal tetrahalide to thereby form